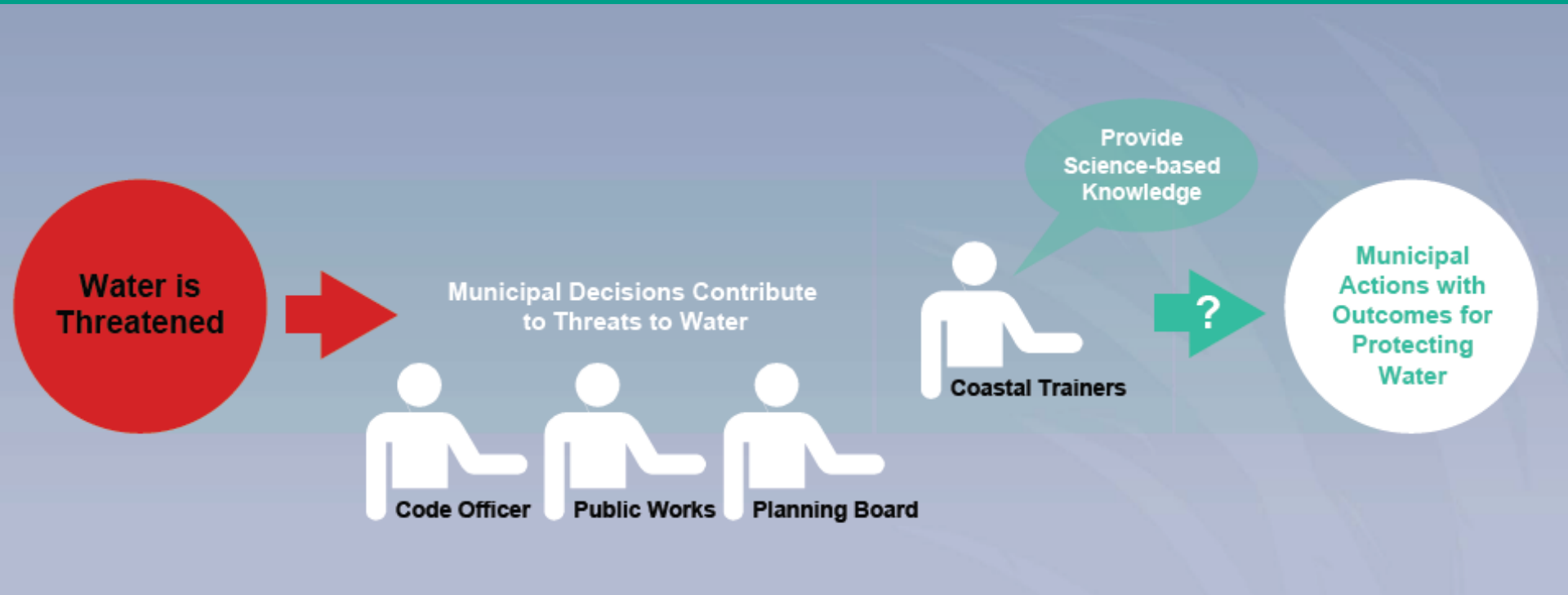
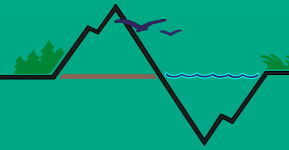
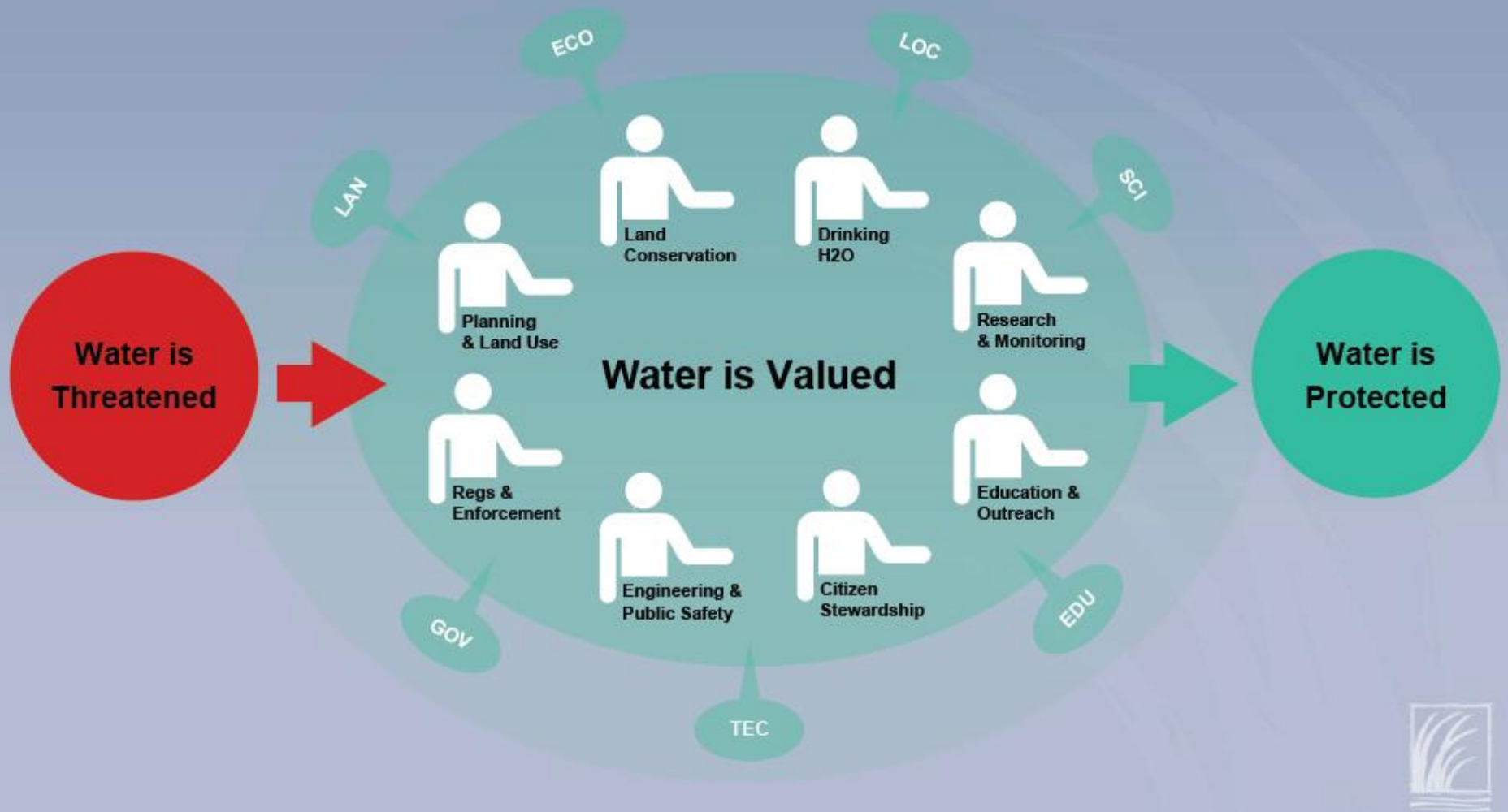


COLLABORATIVE LEARNING

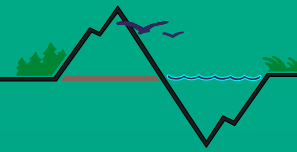
What is it Good For?





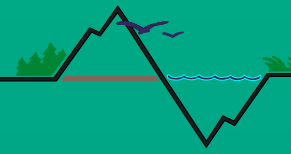
Based upon a collaboratively developed vision of desired future outcomes that integrates ecological, socioeconomic, and institutional perspectives

Taken from Chris Feurt's Collaborative Learning Guide



“Government agencies at all levels and other organizations, including the scientific community, should organize their decision support efforts around principles of effective decision support... begin with end user needs, link information producers and users... build connections across disciplines and organizations.”

- National Academy of Science, 2009



Collaborate

- 1: to work jointly with others or together especially in an intellectual endeavor
- 2: to cooperate with an agency with which one is not immediately connected

Collaborative Learning

“A framework and set of techniques intended for multiparty decision situations... a means of designing and implementing a series of events to promote creative thoughts, constructive debate and the effective implementation of proposals that the stakeholders generate.” - Daniels & Walker 2001

Collaborative Learning is:

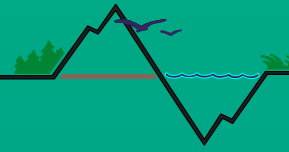
- 1. A philosophy**
- 2. A framework**
- 3. Set of techniques**

→ Redefines the task away from ‘solving a problem’ to ‘improving a situation’

→ Views the situation as a set of interrelated systems

→ Facilitates shared understanding of complex issues

→ Recognizes that considerable learning – about science, issues, and value differences – will have to occur before implementable improvements are possible.



Ecosystem-based Management:

Overarching goal is to take action to sustain nature's ability to supply clean water, healthy air quality and life support services.

Task for Collaborative Learning:

Convene groups of stakeholders who can take specific actions to make progress on this goal by improving the places where they live, work and play.

1. PROCESS

- follow the cycle of experiential adult learning (assessment, design of an action strategy, implementation of strategy, evaluation of results, incorporation of results into design of the next action)
 - Collaborative Learning Process = emphasis on systems thinking and active, mutual learning approaches.
 - fundamental principles of active learning:
 - fairness
 - access: all participating have a process that offers opportunity and potential for being heard
 - inclusion: diverse perspectives represented
 - transparency: process
 - honesty
 - process to support these principles will be collectively determined

2. Relationship

- Stakeholders are considered equal partners in this effort and all participants respect backgrounds and perspectives that each brings to the collective.

3. Communication

- is straightforward, honest, appropriate, respectful, and sincere. A process is agreed upon that fosters respectful dialogue and shared understandings.

4. Inclusion

- an effort is made to identify and include people who provide comprehensive perspectives on the research question or impact of findings AND are in the position to take actions that will move toward the desired outcomes.

→ This research question proposed here was brought to the KBNERR by multiple community members.

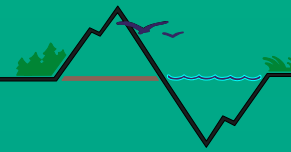
→ Stakeholders were identified that were involved in bringing the question forth and those who could directly use the findings to inform decision-making.

5. Participation

- stakeholders are actively involved in the entire project process and are willing to commit to collective principles established at the outset.
- quarterly meetings with the Core Intended Users
- participation in additional outreach events:
 - Discovery Labs
 - Community Monitoring
 - Other?

6. Facilitation

- supportive facilitation that engages and catalyzes innovation and change.
- Feedback and suggestions for improvement from group members on the collaborative process will be incorporated throughout the duration of this study.



Initial Goals, Objectives, Expectations

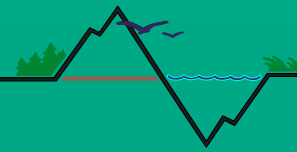


Goals

Hypothesis 6: Local decision makers will be able to:

- 1. communicate the benefits and goals of this study to others and**
- 2. integrate and use the data generated from this study if they have opportunities to learn more about the basic geomorphic processes occurring in our region.**

Hypothesis 7: By making our outreach and education available to the general public, we will identify additional Users of the information generated in this study



Expectations stated in the S.C. proposal:

1. Core Intended Users / Stakeholders will participate in quarterly meetings
2. CIUs will develop collaborative process and provide feedback / evaluations to the process throughout.

Core Intended Users (CIU)	Justification for listing this User	Organization & Professional Responsibilities	How the User may apply this information
City of Homer – Planning	Mayor requested information on coastal uplift & melting glaciers	Planning, zoning, and maintenance of city/port infrastructure	Predict potential problems and inform zoning and planning
City of Homer – Harbor	Water depth is critical to safe vessel traffic patterns	Maintenance and safety of the harbor users	Planning for harbor expansion and maintenance
Kenai Peninsula Borough	Land use changes including uplift and coastal erosion	Responsible for designating natural hazard areas	Identify potential problems and inform planning and zoning
Seldovia Village Tribe	Predicting changes to the local environment on tribal lands	Responsible for environmental monitoring of subsistence foods	Identify potential problems for subsistence harvest of bivalves/salmon
Alaska Department of Natural Resources – Division of Mining, Land and Water	Primary manager of the state's land holdings	Ensure state title, prepare land use plans, leases & permits on state land	Accretion/reliction due to isostatic uplift
NOAA/NOS/NCCOS-Kasitsna Bay Laboratory	Provides baseline information to KBL mission to understand climate change impacts on coastal ecosystems	Provide science products and tools to inform coastal management decisions	Support studies e.g. habitat impacts of glacial melt, habitat mapping, intertidal community biodiversity

Core Intended Users (CIU)	City of Homer	Community Council	DNR	KPB	KBRR	NOAA	SVT
Increase understanding of coast/sea interface in relation to sea level & vertical changes	x	x			x	x	
Inform planning & zoning decision-making	x			x			
Increase public awareness & appreciation of coastal processes		x		x	x	x	
Inform coastal erosion predictions	x				x		
Inform infrastructure planning (Harbor)	x						
Increase understanding of impacts to coastal habitats & their effects on subsistence species (salmon, bivalves)					x		x
Increase understanding of freshwater influence on Kbay ecosystem					x	x	
Better determine natural hazard areas				x			



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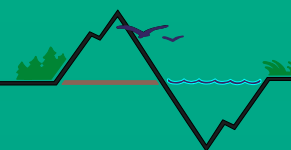
CTP Resources from Past Events



Coastal Science

- "What's New in the Bay" Discovery Lab, 2.3.10
 - Updates on research conducted in Kachemak Bay Area
[Download the Research Overview](#) (3.5 MB)
- Local Impacts of Climate Change, 2.17-18.10
 - Evening panel of speakers with the following presentations:
 - *Overview of observed climate impacts on the Kenai Peninsula*
Ed Berg, Kenai Wildlife Refuge ecologist
[Download the presentation](#) (10 MB)
[Watch the presentation](#) (streaming .wmv file)
 - *Ocean acidification impacts within the Gulf of Alaska*
Jeremy Mathis, UAF chemical oceanographer & assistant professor
[Download the presentation](#) (1.8 MB)
[Watch the presentation](#) (streaming .wmv file)

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PROJECT AT A GLANCE

Title: Assessing Coastal Uplift & Habitat Changes in a Glacially Influenced Estuary System

Place: Kachemak Bay, Alaska

Reserve: Kachemak Bay NERR

Intended Users

- ✓ City of Homer's Office of the Mayor
- ✓ Port and Harbor, and Planning and Zoning Office
- ✓ Kenai Peninsula Borough's Office of the Mayor
- ✓ Seldovia Village Tribe
- ✓ Kachemak Bay NERR Community Council
- ✓ Kenai Peninsula Coastal Management Program
- ✓ NOAA Kenai Bay Laboratory
- ✓ Alaska Department of Natural Resources Division of Mining, Land and Water

Project Team Partners:
Kachemak Bay NERR;
University of Alaska at Fairbanks

Timeline: 9/2010 to 9/2013

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Planning for a Changing Landscape

"Are we going to wash away, or are we going to have new acres of shoreline?" That was the question that the mayor of Homer, Alaska, put to the Kachemak Bay NERR in 2007.

A powerful earthquake rocked this region in 1964. Since then, seismic activity has combined with the isostatic rebound associated with rapidly melting ice fields to thrust portions of the coast upward, affecting habitats and communities. At the same time, the area has been impacted by sea level rise. In the balance of these conflicting forces are communities like Homer that depend on food like salmon that is provided by nearshore habitats, safe harbor infrastructure, and coastal transportation. To plan for a future in this uncertain landscape, they need to understand the implications that coastal uplift and sea level rise have for coastal erosion patterns, infrastructure construction and protection, planning, zoning, and public safety.

A team led by the Kachemak Bay NERR is helping to meet that need by assessing the rate of vertical changes in the coastal landscape encircling Kachemak Bay and monitoring the impacts of coastal uplift, glacial melt, and sea level rise on biological communities.

Local Context

Fifteen glaciers flow into the Kachemak Bay fjord from some of the last remaining ice fields in North America. The Bay is one of the most productive, diverse, and intensively used estuaries in Alaska. As in many coastal areas, traditional resource extraction industries such as timber and agriculture have been in decline,

with a corresponding rise in summer tourism. The local economy largely depends on the lucrative fishing industry and the scenery.

Measurements taken for the Bay's Kenai Peninsula area have documented that vertical uplift is pacing faster than global sea level rise. However, these measurements are not precise enough to meet management's information needs and are not connected to changes in local ecology.

Fueled by a series of articles about isostatic rebound and personal observations of change in the coastal landscape, community leaders from Homer and the Seldovia Village Tribe approached the Kachemak Bay NERR in search of a way to understand what was happening in the Bay and plan for the future.

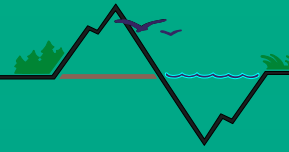
Since it was established in 1999, Reserve staff have been assessing site-specific changes in coastal processes such as bluff erosion, changes in glacial extent, and salt marsh vegetation dynamics. This project builds on their previous work to fill those gaps by characterizing larger scale changes in landscape and sea level rise along Kachemak Bay.



For placement only
need images to reflect
impacts of uplift, SLR

Science Collaborative:

Vertical Uplift & Sea Level Change



Elements for implementing a Collaborative Learning process:

- 1. Provide orientation to: purpose, process, outcome**
- 2. Establish a relevance to work**
- 3. Connect to values**
- 4. Build shared understanding**
- 5. Generate individual issues of concern**
- 6. Evaluate issues of concern (small group)**
- 7. Develop improvement analysis (small group)**
- 8. Share improvements**
- 9. Develop action strategy – who will do what and when?**
- 10. Develop accountability**